

A Lifetime of Healthy Living: Unifying Awareness of Healthy Living Among Appalachia's Diversified Community



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Childhood Obesity

In the past 30 years, childhood obesity has tripled among school-aged children and teens. The Centers for Disease Control reports that 1 in 6 children are overweight or obese, but the rate of obesity is more than double that amount in Kentucky. One of the biggest hurdles in fighting childhood obesity are cultural norms that are passed down from generation to generation related to the type of food that is consumed and how food is prepared. The access to fast food restaurants compared to restaurants that provide more nutrient dense options is also a barrier. Socioeconomic status, familial obesity and education level are all factors that influence the likelihood of increased weight or obesity in children and adolescents. The lack of school related sporting teams and minimal outdoor parks and recreation areas affect overall lifestyle choices.



Fig. 1 My Plate Food Demonstration

Haldeman Healthy Living Initiative

The participants in this initiative included children ranging in age from 8 to 13 that reside in a low socioeconomic region in Rowan County. The initiative took place at an after school program with participants ranging from underweight to obese. Among the children involved in this initiative in the after school program, a severe knowledge deficit existed related to overall health in regards to proper dietary intake and type, quantity, and frequency of exercise, as evidenced by lack of initiative to participate in activities at the beginning of the project, lack of ability to differentiate between nutrient dense and empty calorie foods, and the inability to answer general knowledge based health questions. Several methods were implemented to expand knowledge of overall health, including measuring health indicators and calculating BMI, assessment of knowledge, My Plate food demonstration, games, food preparation and cooking demonstrations, and activities that addressed other good health practices, such as a black light hand washing.

Literature Review

Childhood obesity is not a singular issue. Obesity is multifaceted and connected to numerous systemic body system issues. Previous research by Wilson, et al. on children aged 6-16 was performed to determine the effects on inflammation and inflammatory mediators, especially vitamin D. The conclusion of the authors is that insulin resistance and chronic systemic low-grade inflammation is associated with childhood obesity.

Baum, et al. studied and noted the difference of many specific aspects of the parasympathetic and sympathetic autonomic nervous system of normal weight, overweight, and obese children. Comparisons were made based on BMI of the functionality of the ANS. Conclusions of the study included dysfunction of the ANS in obese children affecting several organ systems.

Another research study conducted by Chang, et al. used ELSIA kits to compare the inflammatory markers in overweight and obese children to that typical of obese adults. The research found that obesity is related to increased lipids, increased insulin resistance, and inflammation, but not adiponectin. These findings directly correlate with the decreased ability to lose weight.

A study by Spence, et al. focuses on the social and psychological impacts that influence food choices along with portion sizes. Eating in the social setting, either in a school cafeteria or a restaurant, has an impact on what type and how much food is consumed. Portion control is directly related to weight status of an individual, therefore making it essential to control. While each food type has different nutritional values, the amount of calories consumed must match the amount of calories burned to maintain the current body weight. The researchers recommend that awareness should increase on the portion sizes of food and advise on overcoming potentially detrimental influences.

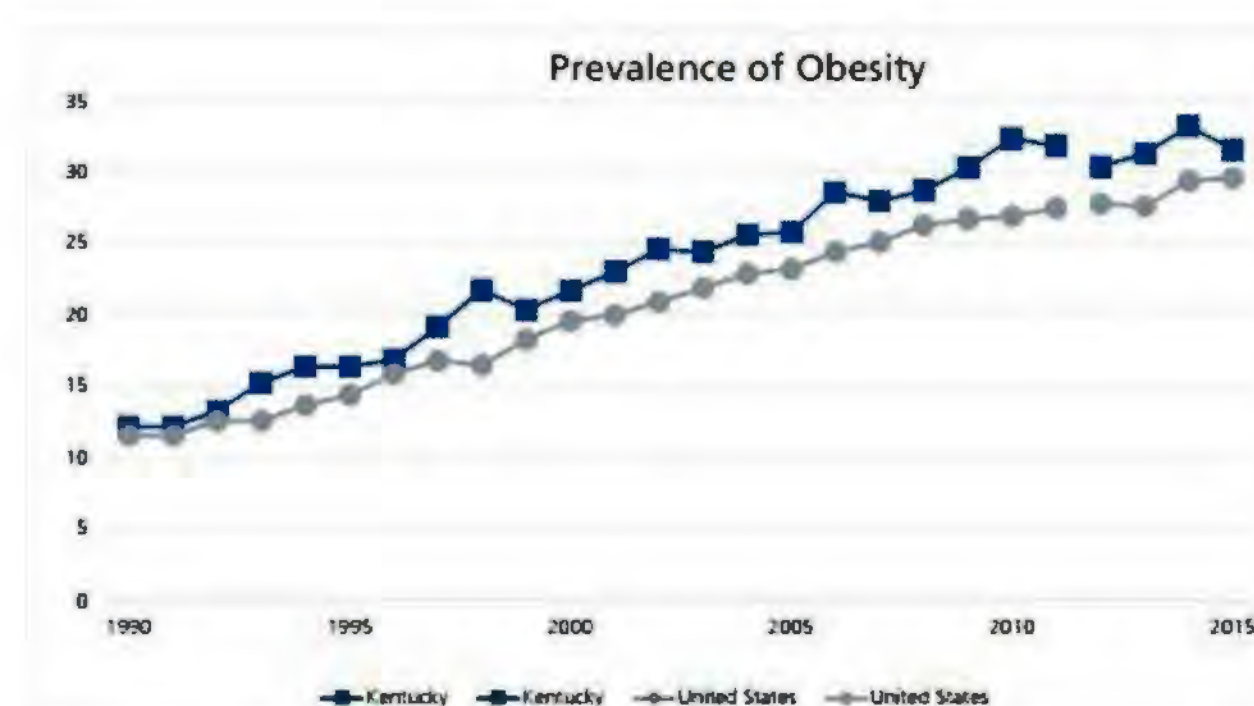


Fig. 2 Prevalence of Obesity in Kentucky

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Haldeman Hayes Crossing
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Body Systems Impairment

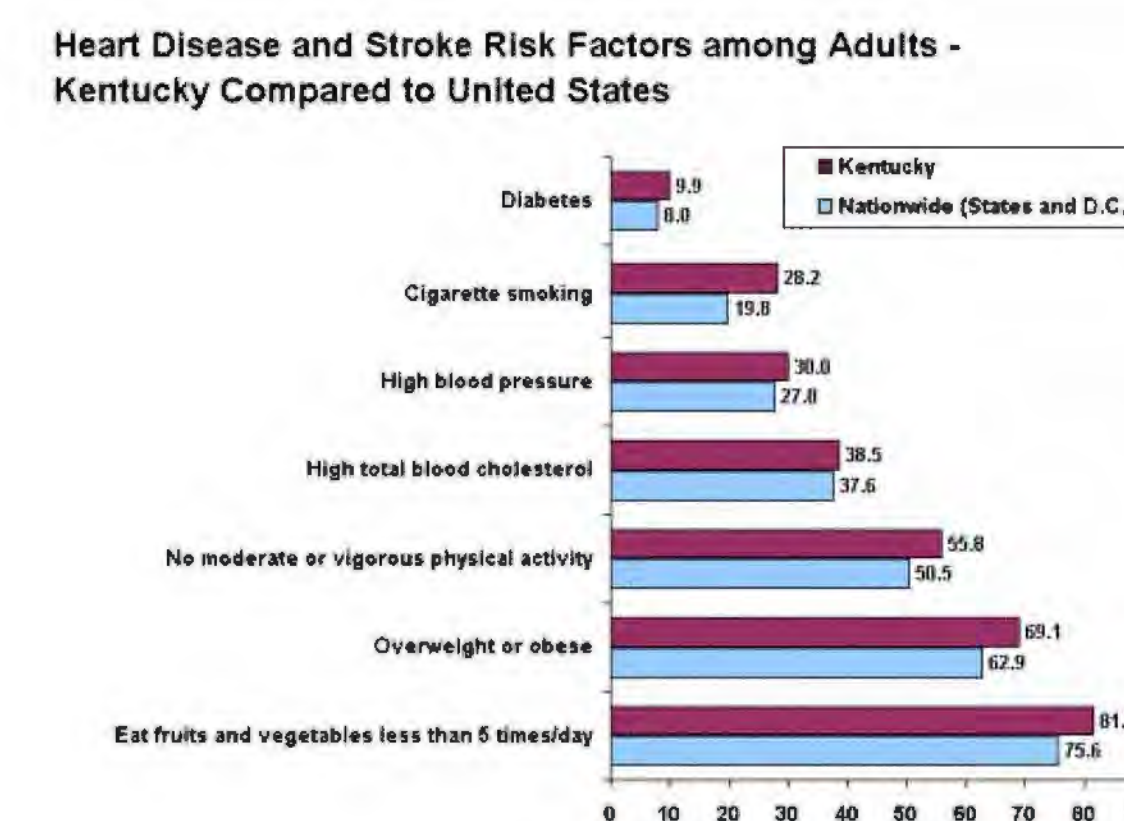


Fig. 3 Health risk factors related to obesity

Children who are obese have a greater risk of:

- ✧ High blood pressure and high cholesterol, which are risk factors for cardiovascular disease.
- ✧ Increased risk of impaired glucose tolerance, insulin resistance and type 2 diabetes.
- ✧ Breathing problems, such as sleep apnea and asthma.
- ✧ Joint problems and musculoskeletal discomfort.
- ✧ Psychological stress such as depression, behavioral problems and issues in school.
- ✧ Low self-esteem and low self-reported quality of life.

Project Outcomes

This study found that increasing awareness of nutrient rich foods impacted food choices, especially when children were involved in the preparation. Using vegetables from the onsite raised bed gardens also increased the willingness to try new food choices. Each activity or method used was well received by the participants and, over the course of the study, increased the overall knowledge and health awareness of the participants. Continued education is very necessary to invoke change to the dietary habits of Kentucky's children. Proper nutrition plays a key role in controlling weight, but physical activity is also necessary. Throughout the study, one participant had a significant decrease in weight and become actively involved in monitoring the types of foods that were consumed. Any positive change in weight and health related behaviors can decrease the risk of comorbid conditions that are associated with childhood obesity, which was evidenced at the conclusion of the study by an increased participation in physical activities, increased confidence and improvement in school-related activities.



Fig. 4 Preparing a healthy meal at Haldeman Community Center after school program.

Evaluation

Obesity, and weight in general, is a difficult topic to approach, and must be executed in a rather diplomatic way. Children often face ridicule from peer groups and run the risk of severe consequences of anorexia or bulimia. The outcomes of this project were positive, leaving children with an increased knowledge of how to take care of their body systems as a whole. Changing learned behaviors passed down from generation to generation is not something that can be accomplished in one year. Continued education throughout the school aged years is recommended, as it will reinforce the need for proper diet and exercise, and hopefully lead to a change in overall health behaviors in this generation. Further study is needed to validate the link between education and life style choices in children.



Fig. 5 Collecting data at Haldeman Community Center after school program.

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